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What Have We Learned About Incentive Mechanisms?

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Abstract

This comment assesses the evidence from four papers on the development process for four breakthrough drugs or treatments. The comment notes that the papers show all the key breakthroughs in the development process were financed either through the National Institutes of Health or various foundations or charities, not drug companies looking to be compensated through patent monopolies. It argues that this evidence suggests patent monopolies are an unnecessary distortion that results in high drug prices and creates perverse incentives. Expanded public funding could replace patent monopolies, allowing new drugs to be sold at free market prices, ending the problem of high drug prices blocking access.

Keywords: patents; drug prices; drug development; corruption; incentives; funding mechanisms

These case studies provide a fascinating insight into the process of drug development. They analyze the process and identifiable costs associated with the development of breakthrough drugs for treating four conditions. For this reason, they give us a snapshot of the success stories of the pharmaceutical industry. This is the reason we value the industry; it can develop drugs that save lives or radically improve the quality of life.

While these studies may not be entirely representative, they were presumably selected because they involve important breakthroughs. They are likely to provide insights into the processes involved in drug development more generally.

In looking at these case studies, I am most interested in what they tell us about the incentives needed to promote innovation. We can think of the current system as a mix of push and pull mechanisms.

A push mechanism is direct funding for research, as is done presently through the National Institutes of Health (NIH) and other government agencies, as well as a number of private foundations and charities. The key pull mechanism is government-granted patent monopolies, and related forms of exclusivity, that allow drug companies to charge prices far above the free market price.

Currently, we rely on push mechanisms for basic research. The conventional wisdom is that we need a patent monopoly-style pull mechanism for the second phase of actually developing new drugs. We also have a third phase of clinical testing, which is by far the most expensive phase. This is generally recognized as a routine task that is most often contracted out to companies that specialize in doing trials. In principle, clinical trials could be financed by anyone, but most are financed by the drug companies that hold patent rights or other forms of exclusivity.

In my view, the most interesting question in assessing these four case studies is whether there is clear evidence of a distinct process involved in the second phase of developing drugs that builds on the basic research funded by the NIH or private foundations and charities. This would help to assess whether it is important to have a different funding mechanism for this second phase of the drug development process.

Reading through these four case studies, it is difficult to see any sharp break between the sort of basic research supported by the NIH and private charities and foundations and the later work funded by drug companies expecting to profit from patent monopolies. For example, in the case of Keytruda, it seems most of the important preclinical research was done by research teams led by Sir Gregory Winter and Tasuku Honjo. Most of their work was supported by governments or private foundations and charities.[1]

The main preclinical contribution supported exclusively by a private company was the accidental discovery, by researchers at the company Organon, of an antibody in mice that stimulated the immune system to kill cancer cells. Even after this discovery, the research still relied on funding from a UK government-supported charity to humanize the antibody, which was an essential step in producing the drug. According to Love et al, progress in the development and eventual clinical testing of the drug that became Keytruda was actually slowed by the two companies that eventually came to control the drug through corporate takeovers.[2]

In the case of the four drugs for treating cystic fibrosis, there is no break between work supported by public sources and charities and work supported by the pharmaceutical industry.[3] Public sources and charities were partners at every step along the way in the preclinical development process.

The evidence in the Zolgensma case study[4] indicates that this treatment for spinal muscular atrophy, a rare genetic neuromuscular disease, was developed entirely at the expense of private charities and public sources. The first major intervention of a private company was in arranging the funding for a clinical trial.

The case of Luxturna appears even more extreme.[5] This treatment for a genetic disorder that causes blindness in children was developed entirely with funding by public sources and charities. In fact, even the Phase I clinical trials were funded by these sources,

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with Spark Therapeutics, the company that holds the rights to the drug, only coming in at the last phases of testing.

If the preclinical research done by companies relying on patent monopolies does not qualitatively differ from the work supported by governments and private foundations and charities, it is hard to see a good reason for relying on patent-supported research. We can instead look to expand the support for push mechanisms.

The advantages of switching to a push system of direct funding are many. First and foremost, it would virtually eliminate the problem of high-priced drugs being inaccessible to much of the world's population. Drugs are rarely expensive to manufacture and distribute; the high prices are almost entirely the result of patent monopolies and other forms of exclusivity. If all drugs could be produced as generics, with free market competition, there would be few instances in which they sold for high prices.

However, the benefits of relying on a system of direct funding go much further. By taking away the huge profits that can be gained by selling drugs at prices that are several thousand percent above their production costs, we would eliminate most of the incentive to misrepresent the safety and effectiveness of drugs.

This is a massive problem both at the level of prescribing drugs, where doctors can be misled by drug companies, as happened with the opioid crisis, but also at earlier stages in the research process. When there are potentially large profits at stake, a company or researcher with a stake in a potentially valuable patent has an incentive to produce research that would enhance the value of this stake. If all research was in the public domain, and there were no property rights in it, this incentive would no longer exist.

In addition, if research was publicly supported, a requirement of funding could be that research is fully open source, meaning that all findings must be posted on the web as soon as practical. This would allow researchers everywhere to both benefit from breakthroughs and learn of potential dead ends, where research indicated that a specific path was not likely to produce useful outcomes.

This would also eliminate the problem of researchers veering away from certain areas out of concerns over potential patent infringement. If there are no patents, researchers can pursue any leads that seem promising.

And it would radically reduce the problem of resources going to develop duplicative drugs. It is often desirable to have multiple drugs to treat a condition, since not all people react the same way to drugs, and some drugs may interact poorly with other drugs a patient is taking. But in most cases, it would be more desirable to get a drug for which an effective treatment is not available than to get an additional drug to treat a condition for which effective treatments already exist.

The patent system provides an incentive to continue to press forward with research even when it is clear that it will not lead to a substantial public health benefit. A pharmaceutical company will get no return on its investment if it does not have a drug or treatment to market. Therefore, it has an incentive to continue to develop a drug even if it knows that it will not likely be a substantial improvement over existing drugs.

This doesn't mean that we never want to have multiple drugs to treat a condition, but there should be some advantage, say fewer side effects, from a duplicative drug. Developing a drug just to get a share of patent rents is not a good use of economic resources.

By contrast, if the research was publicly supported, and it was clear that it would not end in a drug providing substantial benefits, the incentive would be to redirect funding into other options rather than continuing to pursue the development of a drug providing little benefit. This altering of incentives is important not just from an economic perspective, but also from a public health perspective. We should not want to put patients into a clinical trial when it is already known that the drug being tested will likely be of little medical value.

If we were to go the route of replacing patent-supported research with public funding, it would be necessary to hugely increase the funding currently available. The industry currently spends around $150 billion on research each year in the United States.[6] It would be necessary to come up with a comparable sum to replace this funding, but it would be more than offset by paying around $500 billion less for drugs and other pharmaceutical products as a result of getting them at free market prices.[7]

It would likely be desirable to set up new funding mechanisms for disbursing such large sums. I recommended a system of long-term contracts (e.g. ten to twelve years) to support research in specific areas.[8] This would ensure competition and that researchers had incentives to produce useful work. In my view, it would also be important that the funding not be directed explicitly toward developing new drugs. If research determines that nutrition or environmental factors work towards reducing incidents of a particular condition, it would be desirable to reward this finding to the same extent as developing a drug with a similar impact.

This sort of system of long-term contracts would also go far toward insulating the process of drug development from political interference. Given recent Supreme Court rulings, nothing would prevent an administration from awarding new contracts based on narrow political considerations, but it would be difficult for them to interfere with contracts awarded in past years. Also, the current system is not fully insulated from politics, as we have recently seen, both in Food and Drug Administration approval policy and decisions on payments for drugs by government programs.

It would also be desirable to negotiate a system for sharing research costs internationally. This would be a difficult process, but the current system of negotiating international rules on patents and other forms of exclusivity has also proven to be a difficult process. There is no reason to believe that a system of shared research costs would pose greater problems.

The best design for a system of public funding should be a topic of major debate, but the main point here is to recognize that there is no need to rely on patent-type pull mechanisms for financing the development of new drugs and treatments. The push mechanisms of direct funding seem highly successful. Adding in patent monopolies creates huge problems in both access and research integrity that direct upfront funding avoids.

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References

1. James Love et al., "Keytruda," *Monograph Series on the Development of Biomedical Innovations* (Knowledge Ecology International, August 2021).
2. Love et al., "Keytruda."
3. James Love et al., "Vertex Cystic Fibrosis Products," *Monograph Series on the Development of Biomedical Innovations* (Knowledge Ecology International, September 2021).
4. James Love et al., "Zolgensma Case Study," draft, July 30, 2021.
5. James Love et al., "Luxturna," *Monograph Series on the Development of Biomedical Innovations* (Knowledge Ecology International, August 2021).
6. US Bureau of Economic Analysis, *National Income and Product Accounts*, table 5.6.5, line 9, BEA table 5.6.5, https://apps.bea.gov/iTable/?reqid=19&step=2&isuri=1&categories=survey#eyJhcHBpZCI6MTksInN0ZXBzIjpbM

SwyLDNdLCJkYXRhIjpbWyJjYXRlZ29yaWVzIiwiU3VydmV5Il0sWyJOSVBBX1RhYmxlX0xpc3QiLCIzMzEiXV19 (last accessed August 18, 2026).

7. US Bureau of Economic Analysis, *National Income and Product Accounts*, table 2.4.5U, line 122, BEA table 2.4.5U, https://apps.bea.gov/iTable/?reqid=19&step=2&isuri=1&categories=survey#eyJhcHBpZCI6MTksInN0ZXBzIjpbMSwyLDNdLCJkYXRhIjpbWyJjYXRlZ29yaWVzIiwiU3VydmV5Il0sWyJOSVBBX1RhYmxlX0xpc3QiLCI3MCJdXX0= (last accessed August 18, 2026).
8. Dean Baker, *Rigged: How Globalization and the Rules of the Modern Economy Were Structured to Make the Rich Richer* (Center for Economic and Policy Research, 2016), https://deanbaker.net/images/stories/documents/Rigged.pdf.